



# **A Review on Applications of Coal Fly Ash in China**

**--policy and technology**

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# outline

**Introduction**

**Policies system in China**

**Comprehensive applications approach**

**roadmap of application**

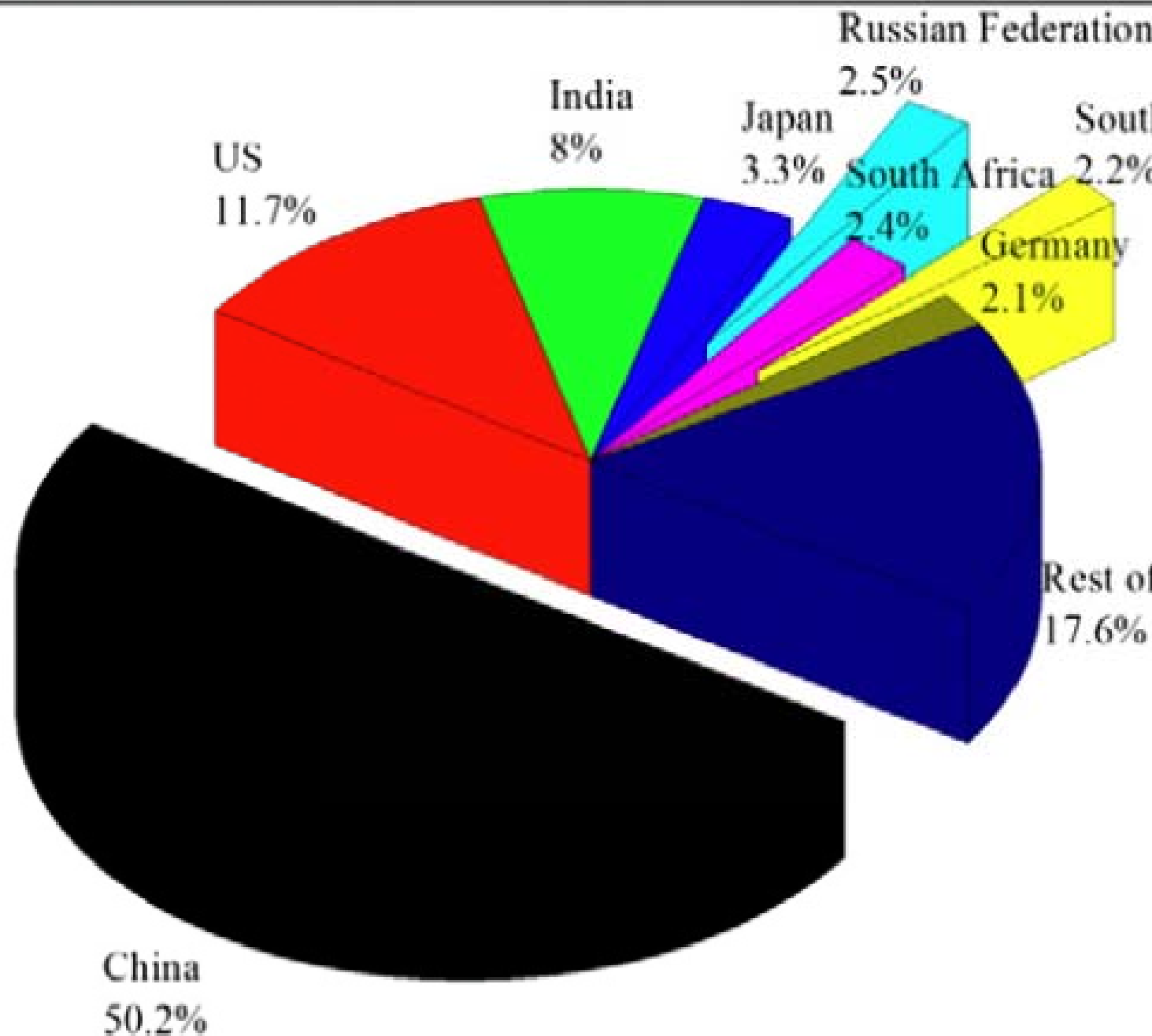
**Challenges and opportunities**



# INTRODUCTION

## Distribution of coal consumption worldwide in 2012

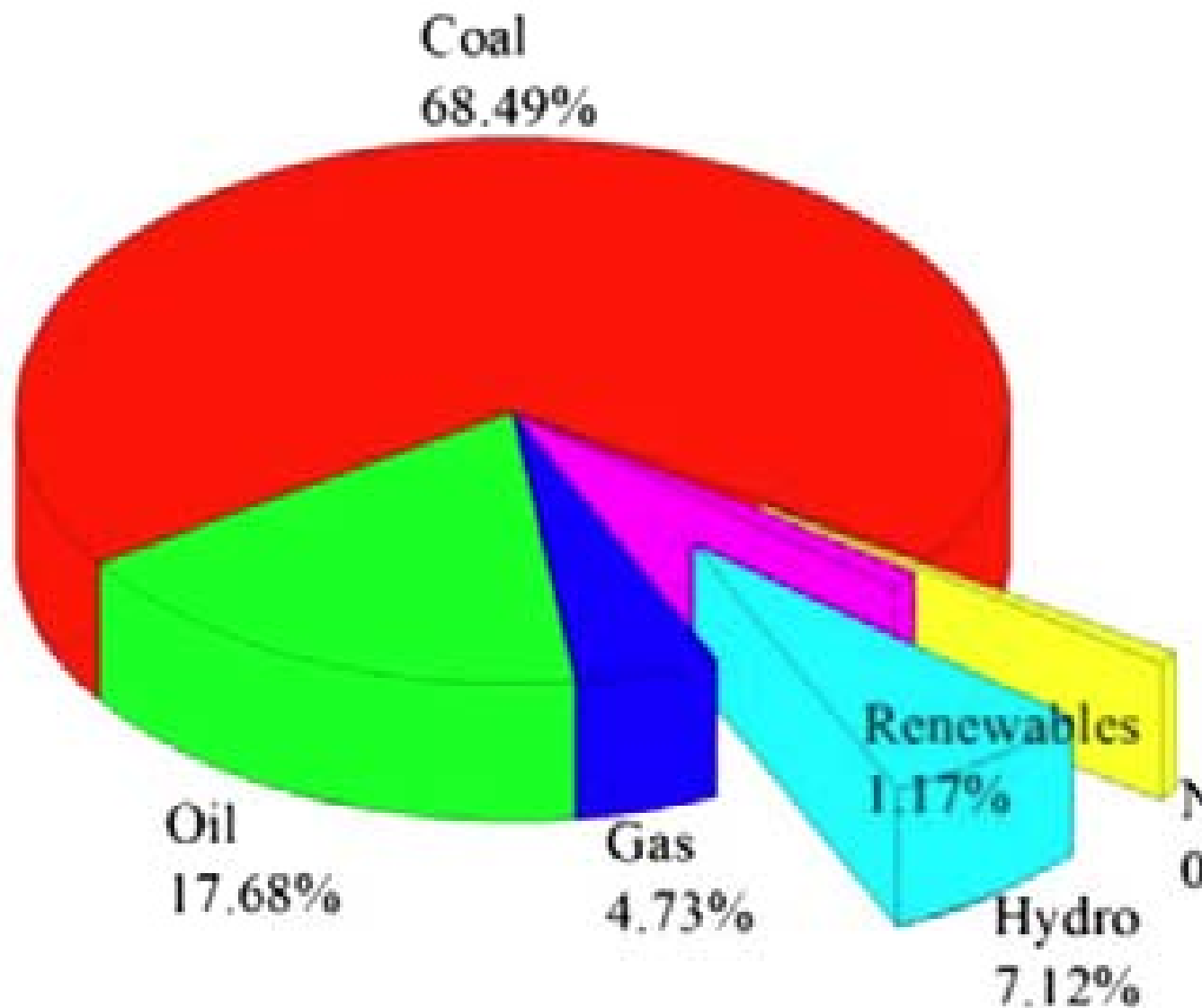
High prices for oil and natural gas have made coal-fired power generation more competitive. Economically, coal is particularly attractive in nations that are rich in coal resources, such as the US and China. China is the largest coal consumer in the world and accounts for 50.2% of world coal consumption in 2012.



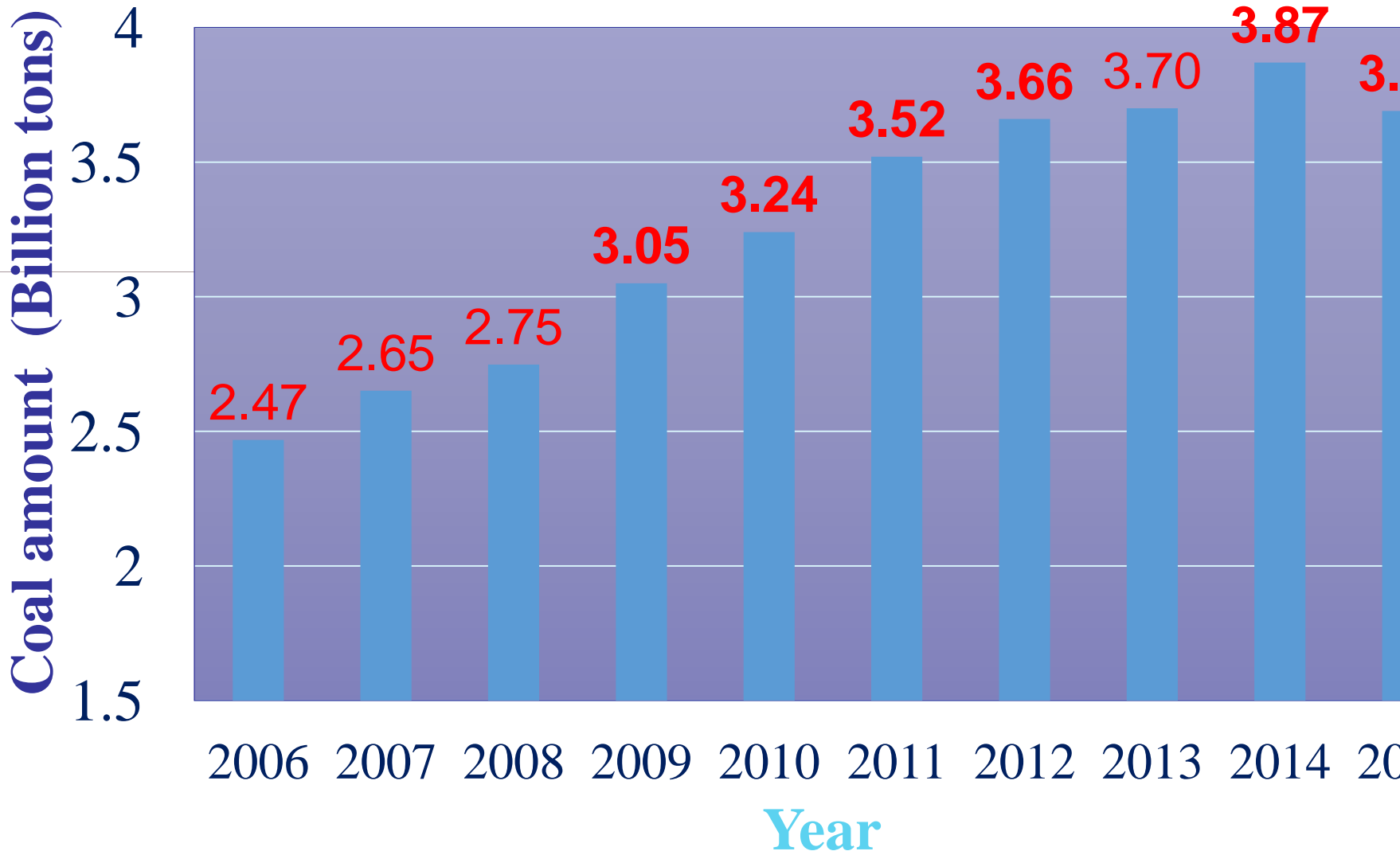


## Energy consumption in China in 2012

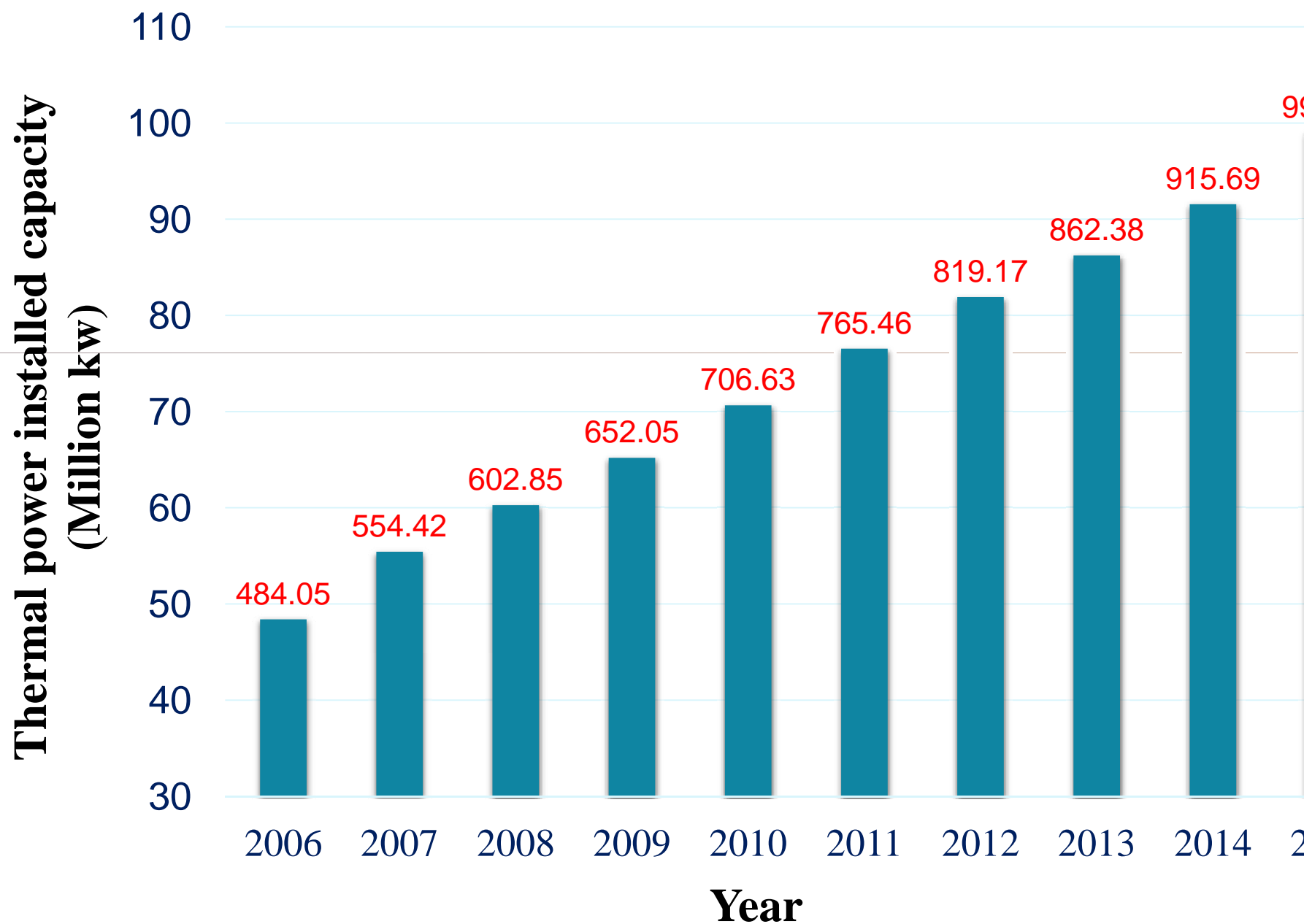
China



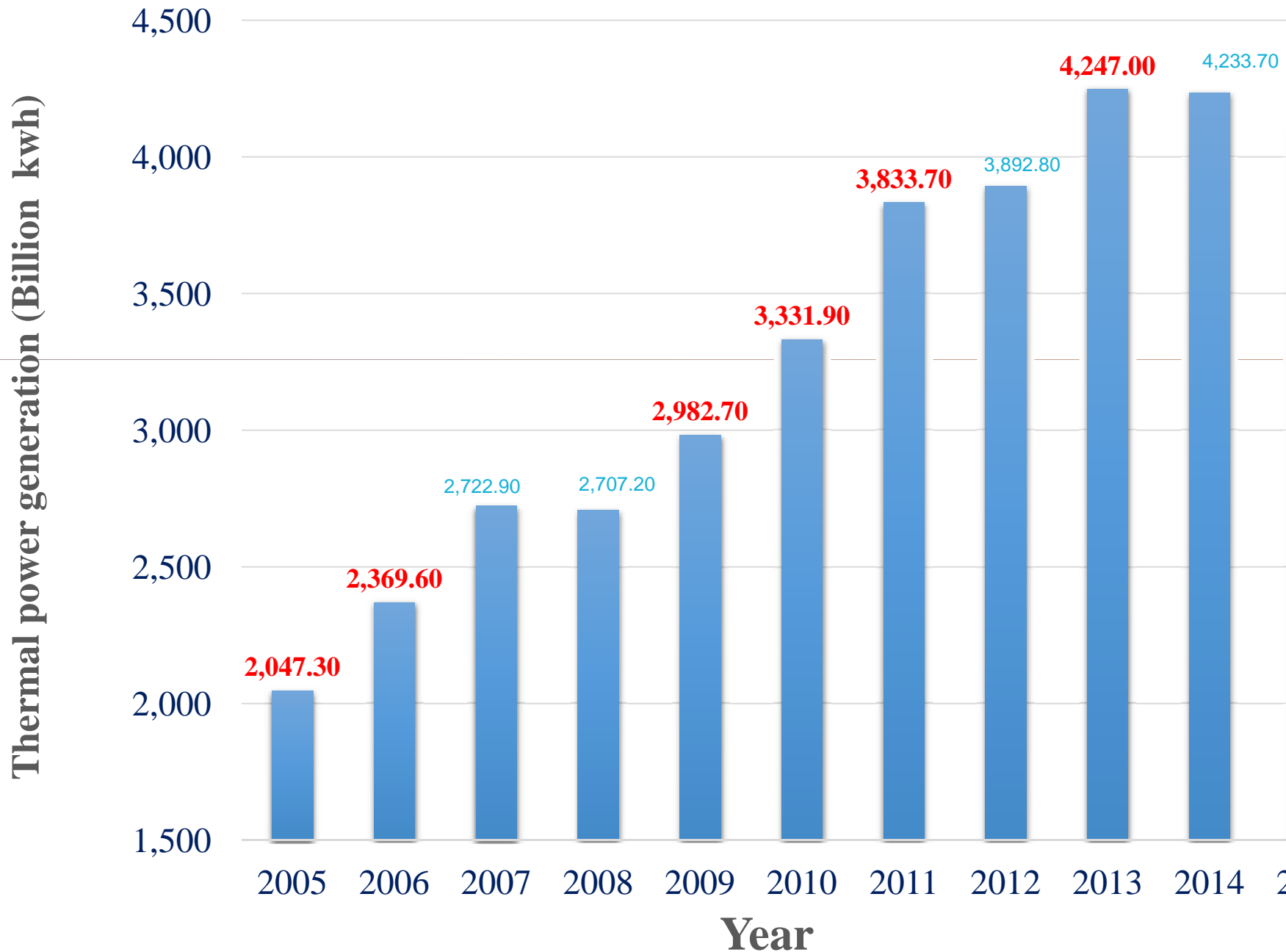
coal amount in China



## Thermal power installed capacity in China

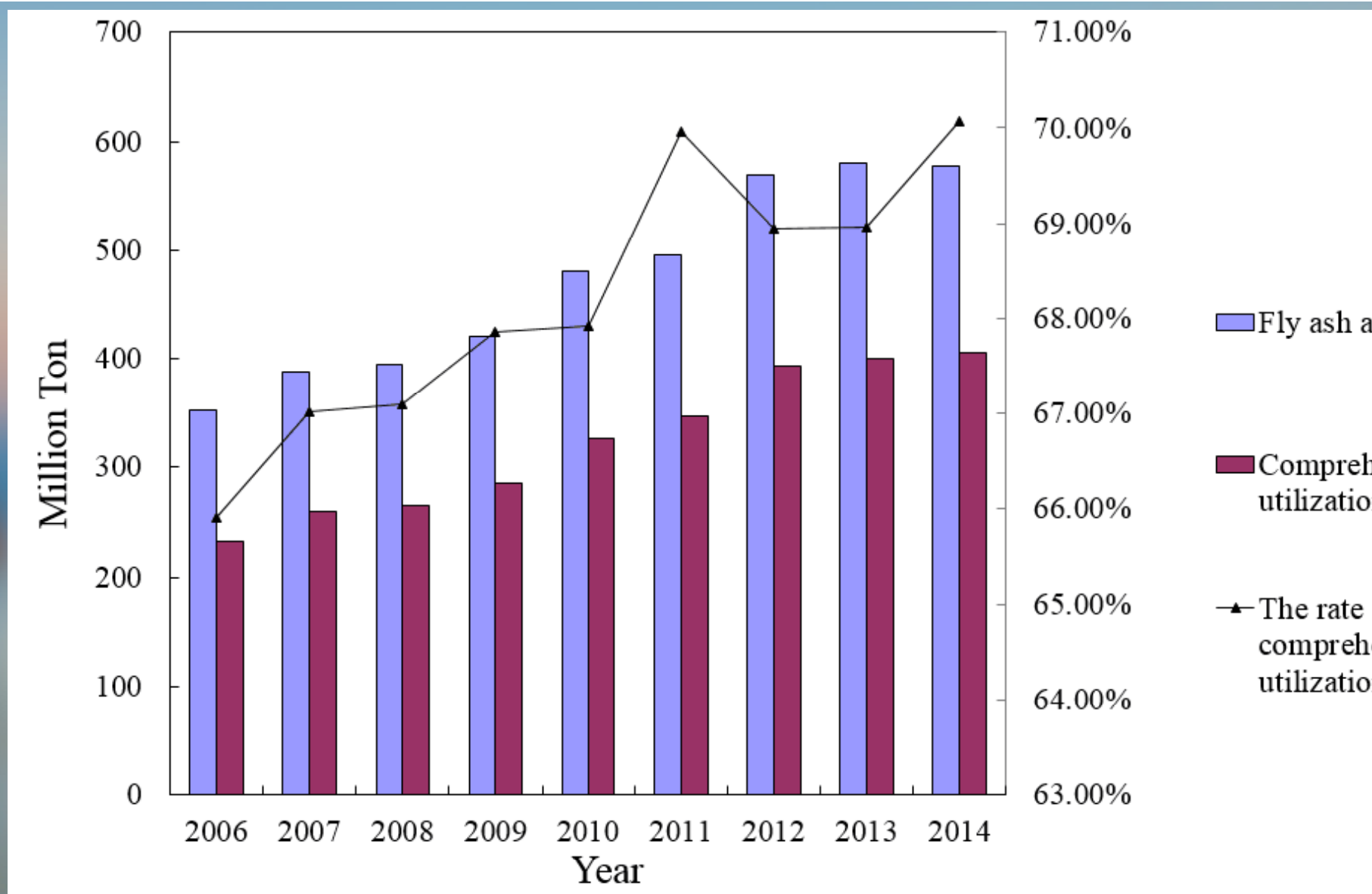


## thermal power generation in China



## the status of fly ash comprehensive utilization in China

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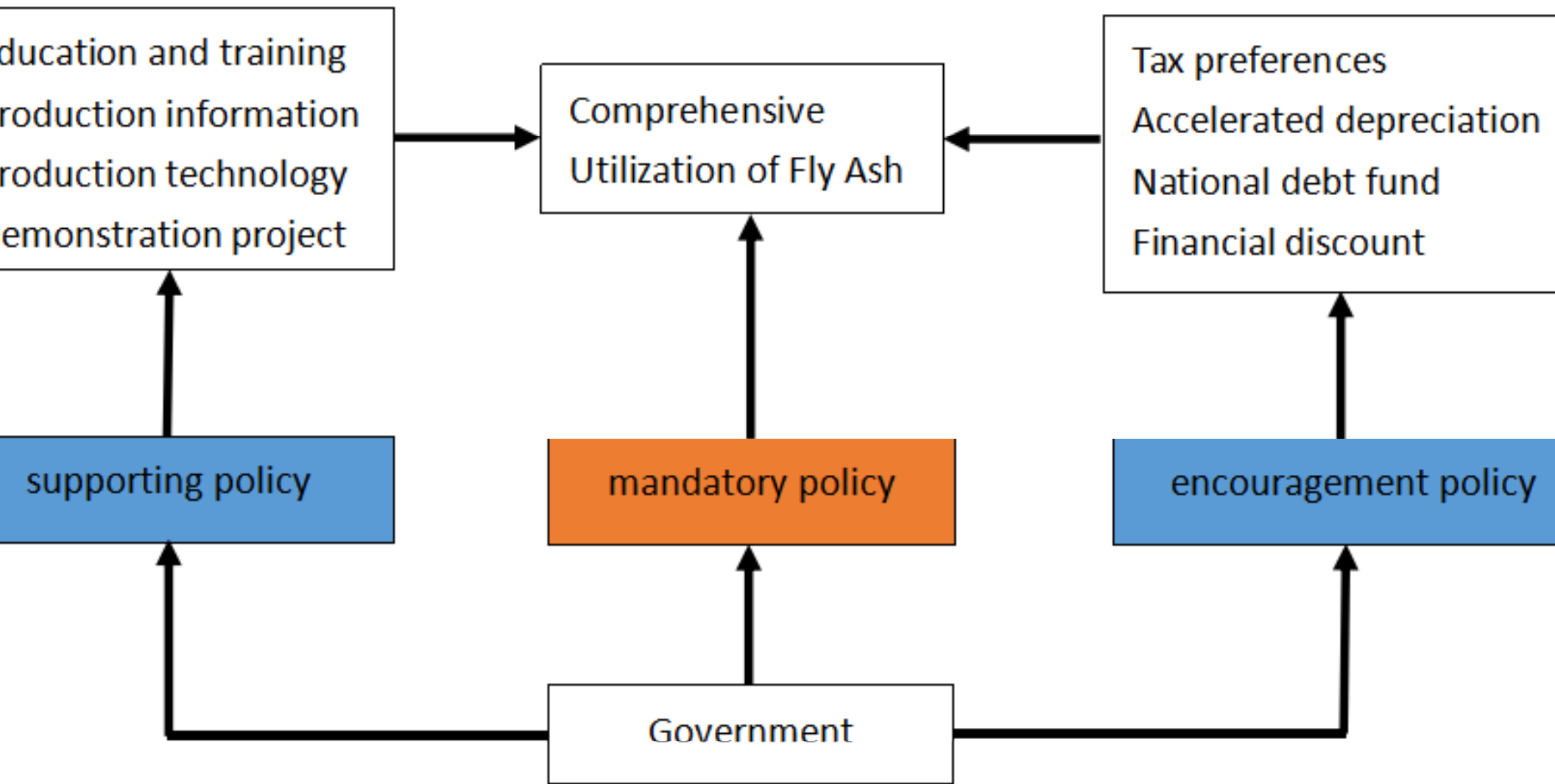




## **Policies in China**



# Policies system



# the principle of policy system

- ③ multiple comprehensive utilization
- ③ encouraging policy
- ③ market orientation
- ③ technology promotion
- ③ the participation of whole society
- ③ dynamic adjustment

# **law system of fly ash comprehensive utilization**

The notice on carrying out the further comprehensive utilization of resources(the central government) No. 36(issued in 1996)  
the list of Comprehensive utilization of resources(issued in 1996, modified in 2003)

Circular Economy Promotion Law(implemented in 2002)

Cleaner Production Promotion Law(implemented in 2009)

Measures on the comprehensive utilization of fly ash(2013)

# **the features of Measures on the comprehensive utilization of fly ash(2013)**

- ③ confirming the concept of fly ash including fly ash from precipitator and also from boiler bottom
- ③ the whole process management
- ③ clarifying the responsibilities of the management department much further
- ③ Establishing comprehensive utilization planning in the province respectively
- ③ In accordance with the current laws and regulations



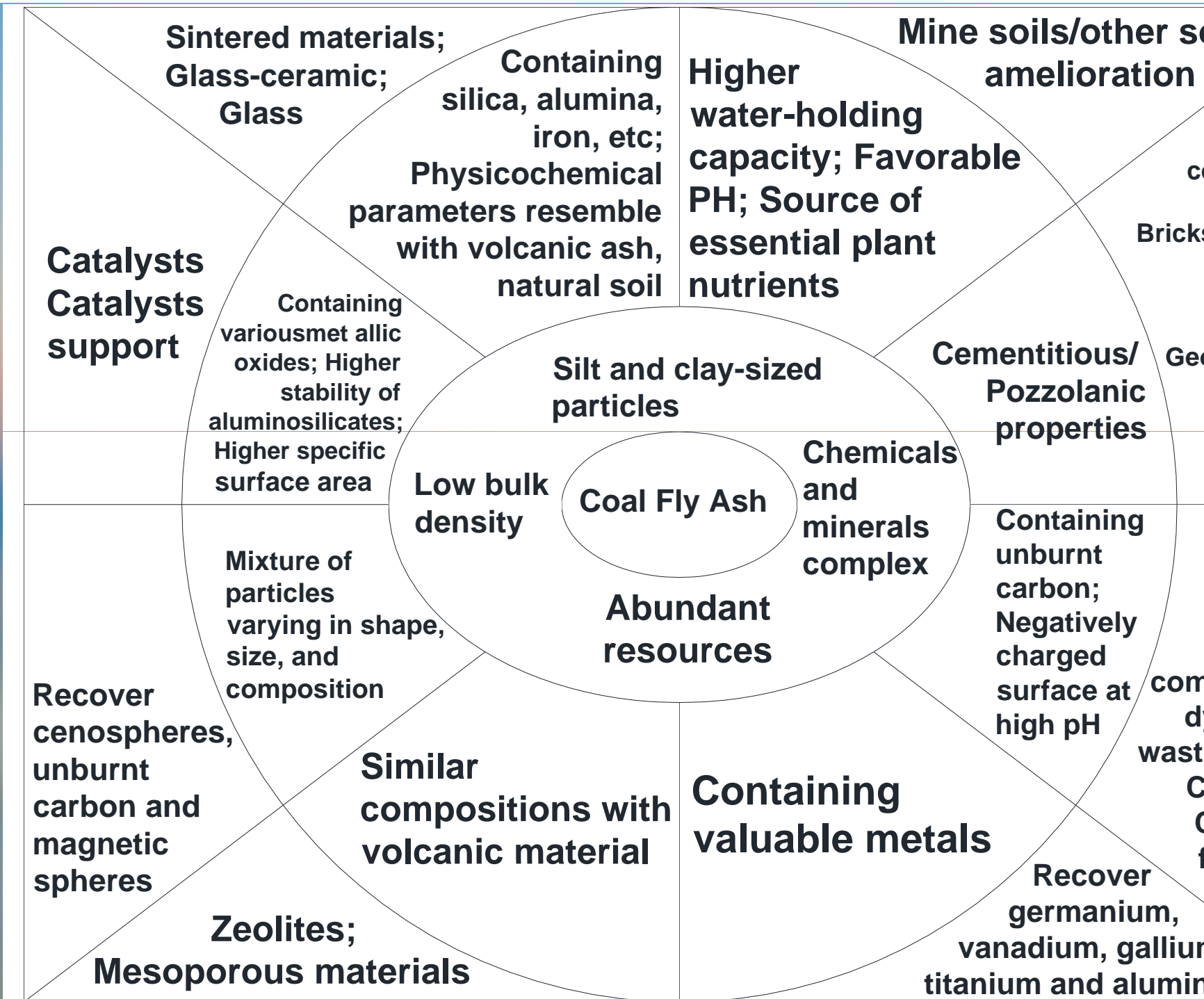
# **COMPREHENSIVE APPLICATION APPROACH**

# Fly ash comprehensive utilization

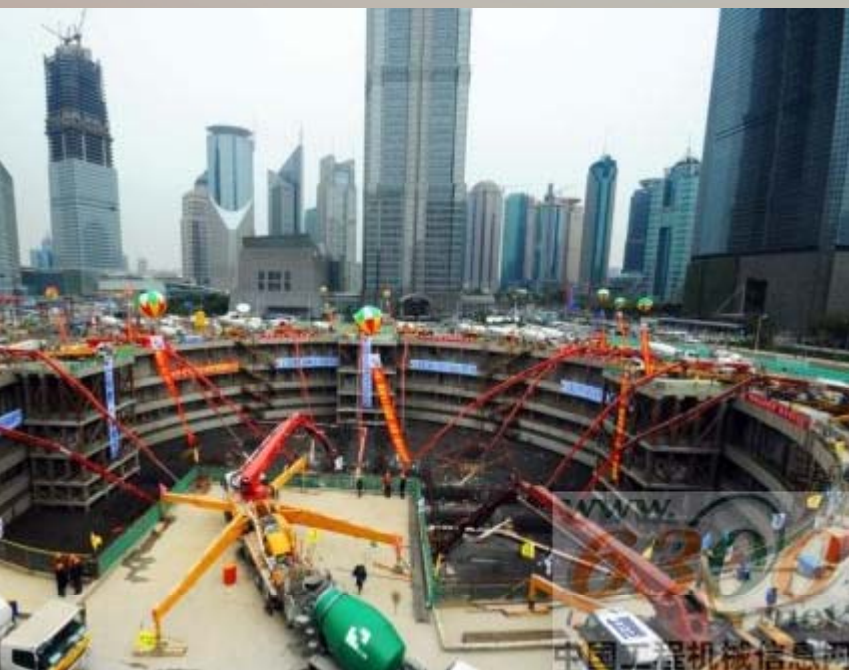
- **Soil amelioration**
- **Construction industry**
- **Ceramic industry**
- **Catalysis**
- **Environmental protection**
- **Depth separation**
- **Zeolite synthesis**
- **Valuable metal recovery**



# Applications of fly ash



# y ash concrete



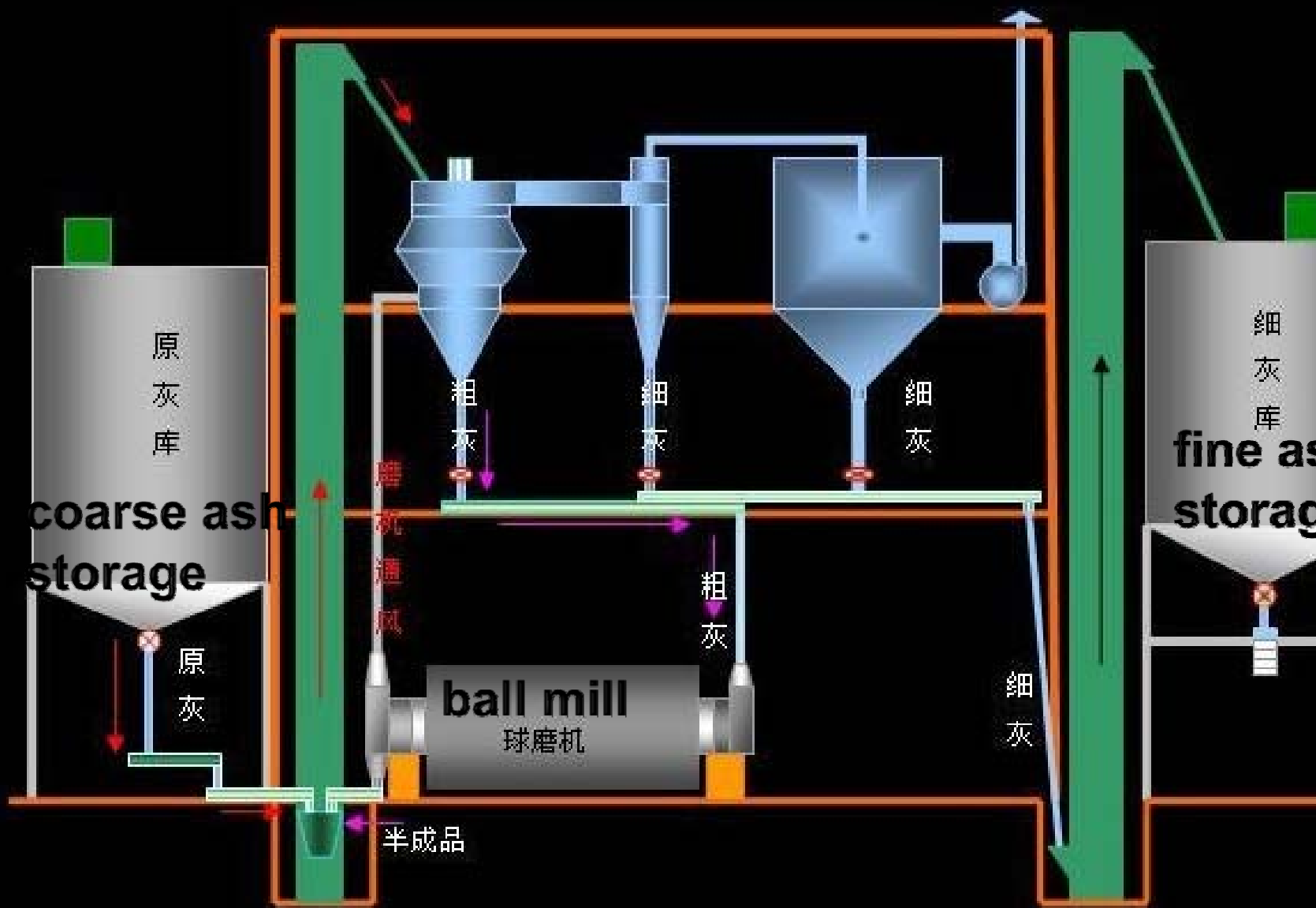


fly ash bricks





# reatment e of fly ash



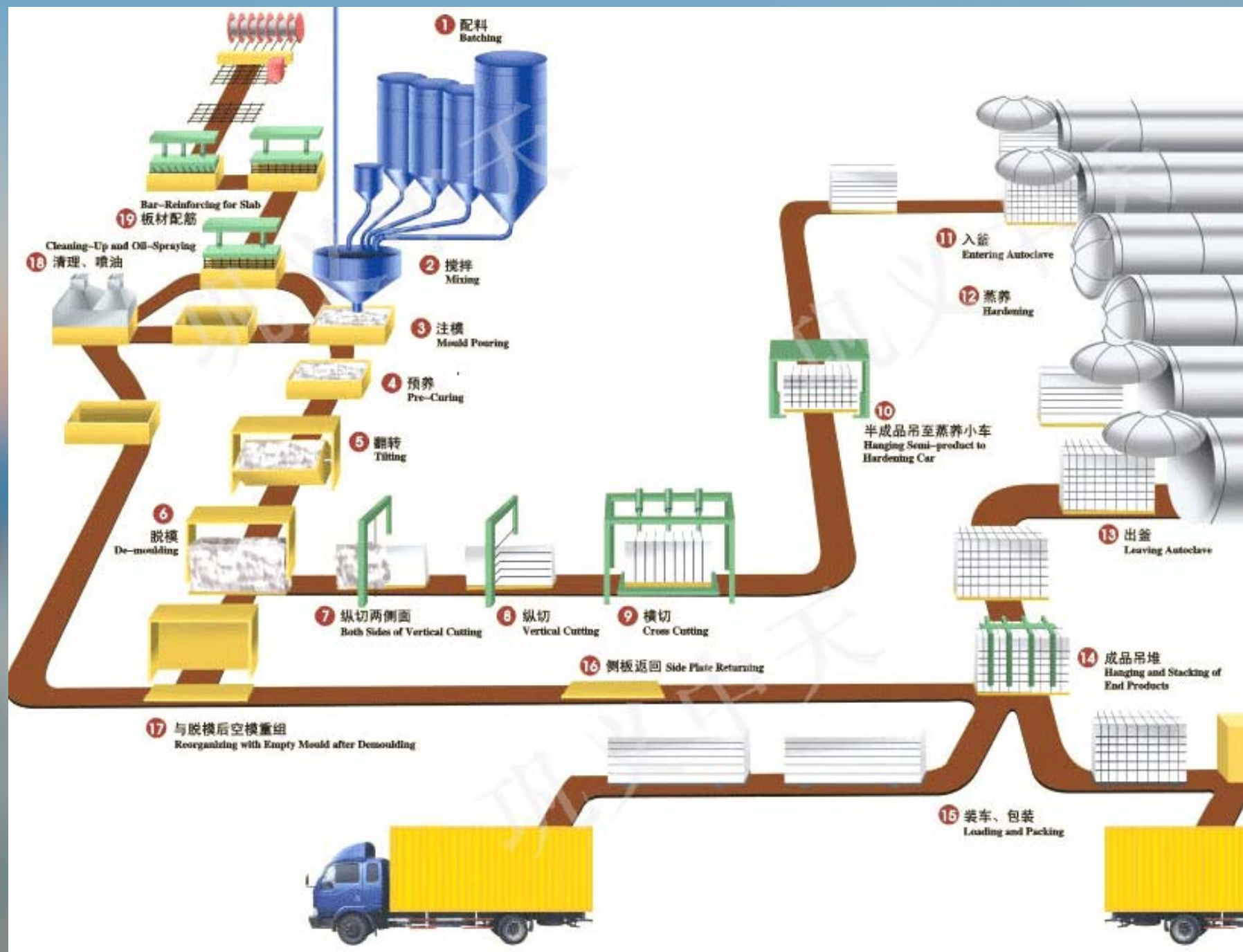
粉煤灰磨细分选工艺流程图

盐城紫光公司

**Ball mill  
machine**



# fly ash erated crete lock duction ine









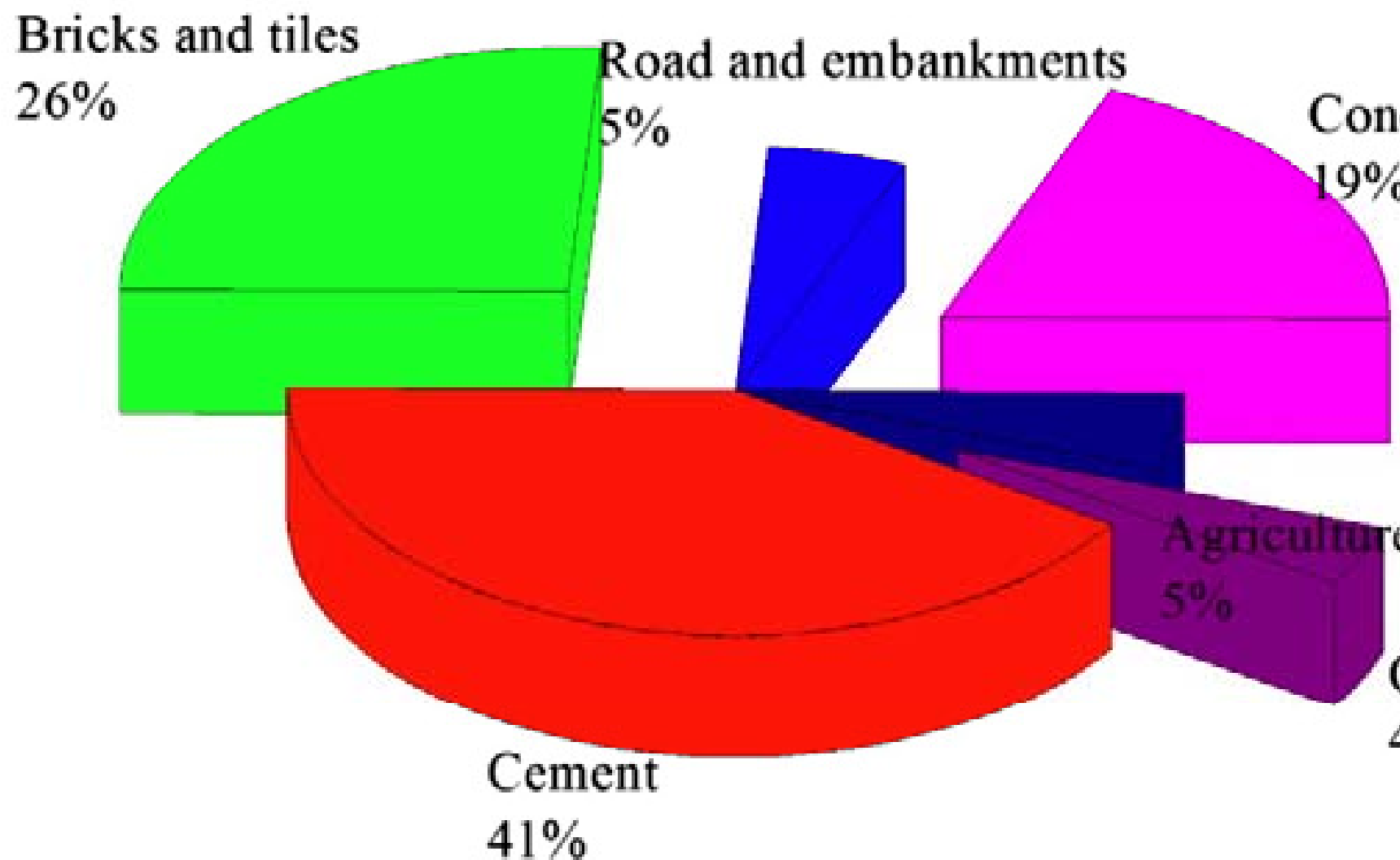
erated concrete blocks



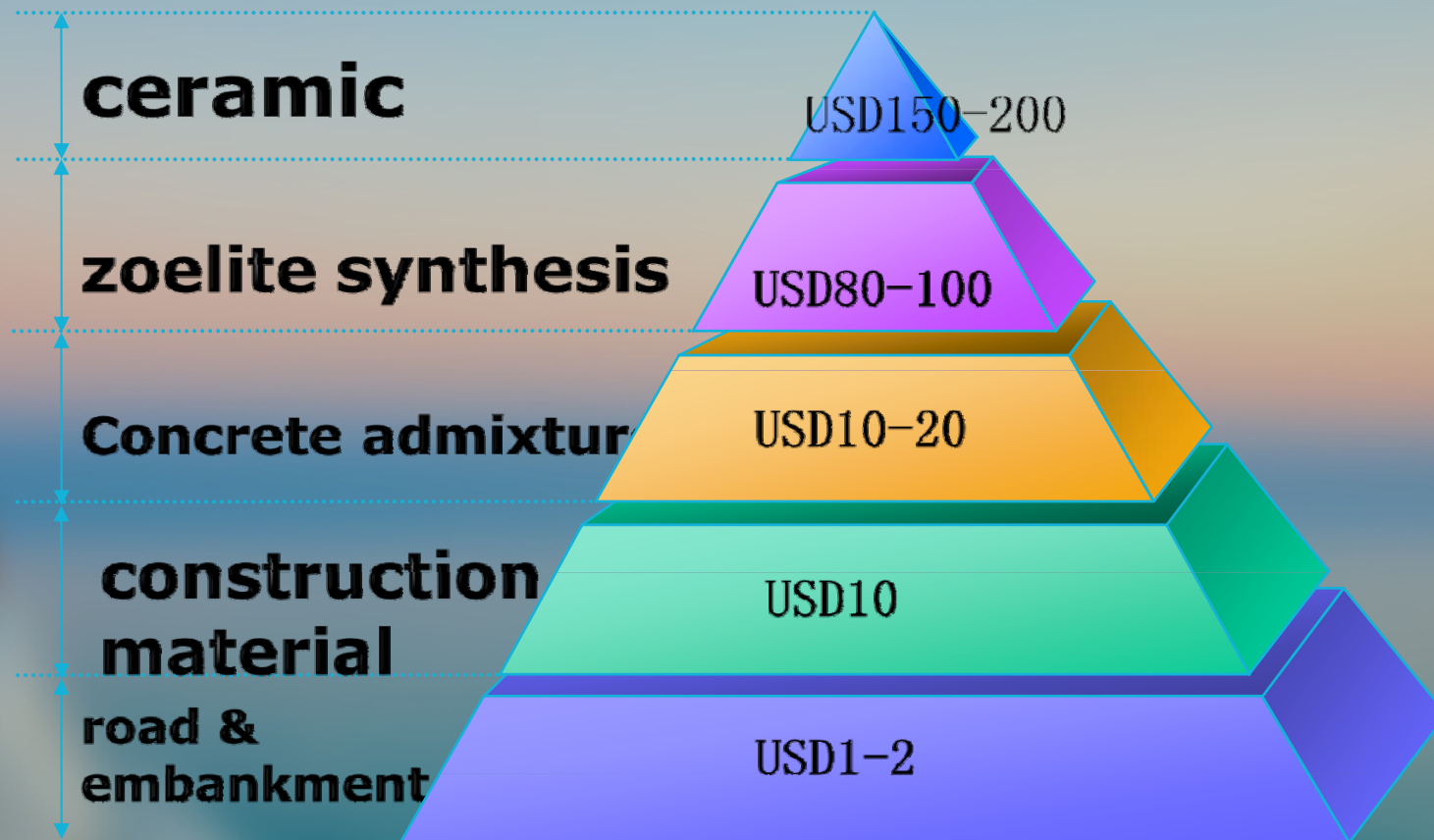


# Roadmap of Utilization

map  
y ash  
zation  
china



## the added value of different mode



should concern two points: First, the growing trend of identified as key applications such as cement and concrete, mine reclamation, bricks and tiles, and road and embankment should be retained. Second, in addition to the first, underutilized large potential applications should be explored.





# **Challenges and Opportunities**

# challenge 01

**China is a big country. In winter constructions are ceased. Fly ash is stored at ash storage yard in the Northern area. On the other hand in the South, The situation is very optimistic.**

# challenge 02

**The fly ash amount is ascending while frastructure construction is descending.**

# challenge 03

**There is a big gap between the eastern and western area because of the unbalance development of them**

# opportunities

**new technology and high-value-added products**

**We have a lot of opportunities, If we have new technology or have high value added products. Most reported methods are still in the early stages of commercialization. Further studies are needed to turn this research into commercial reality.**



**THANKS FOR YOUR  
ATTENTION!**